"Kinertia" Versus Einstein

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Citations That Raise Delicate Question on Age of Theory of Relativity

THE intellectual world generally moves slowly in the matter of extending recognition to those who have consecrated their lives to the cause of reason. Mendel had been dead many years before the remarkable nature of his work was recognized. When we contrast Mendel's case with that of Einstein we are forced to admit that the German physicist's sensational rise is the most extraordinary in the history of science. Barnum, the king of advertisers, could not have staged a more effective and expeditious advertising campaign. Within the brief period of a few months, Einstein's name became known in every civilized country in the world. The Theory of Relativity afforded cartoonists material for humorous sketches, and the doctor and his doctrine became subjects for mirth and merriment.

After the first volcanic outburst of scientific approval and humorous recognition, rumblings of discontent were heard from Einstein's native land. A group of German scientists, in no uncertain terms, expressed their doubts concerning the precise value and originality of Einstein's theory. There were even those who boldly charged the author with deliberate plagiarism. In England Sir Oliver Lodge and a few other able men cautioned the world against a too hasty acceptance of the new doctrine of relativity. In the United States, however, Einstein's theory met with immediate and complete success. Even at the present time we rarely hear a dissenting voice. This is particularly strange for the reason that in the year 1914 a well-known American journal published a series of articles by an unknown investigator who discussed the very same problem which brought fame to Einstein. We refer to the eleven articles written by the unknown "Kinertia," which appeared in *Harper's Weekly* under the caption "Do Bodies Fall?" If it is true that "Kinertia" actually considered the Einsteinian problem in these essays, then the question of priority is inevitably raised and the unparalleled originality claimed for Einstein's work becomes a debatable matter. Indeed, the presentation of the very facts which raise these questions is the main purpose of this article. Since the matter of priority is involved, the introduction in this article of a brief chronological survey of the work of both Einstein and "Kinertia" is of the utmost importance.

The most significant contributions of Albert Einstein have been published in *Annalen Der Physik*. His papers deal with the Special Theory of Relativity, Theory of the Brownian Movements, Inertia of Energy, the Quantum Law of the Emission and Absorption of Light, Theory of the Specific Heat of Solid Bodies, and the General Theory of Relativity. The year 1905 is considered, by most authorities on Einstein's work, as the birth-year of the Theory of Relativity. Careful search, however, has revealed a paper on this subject which was published in Berlin during the year 1904 in the journal *Sitzungsberichte*. That portion of Einstein's theory which deals with the phenomenon of gravitation is a later development. Einstein first gave his attention to the problem of gravitation in 1911, when he developed the Principle of Equivalence of gravitational and accelerative fields. Other phases of this subject were dealt with in papers which appeared in the years 1912 and 1913. A further elaboration, the joint work of Einstein and Marcel Grossman, appeared in 1914. The theory in its final and complete form was announced in the year 1915.

"Kinertia's" contribution deals principally with the problem of gravitation. The question of priority of "Kinertia" over Einstein consequently involves the phenomenon of gravitation in particular. It must be admitted, however, that "Kinertia" has also considered Einstein's earlier problem which involved the significance of motion in reference to an observer. Einstein distinguishes this earlier problem from his theory of gravitation by the separate designation, "Special Theory of Relativity." A brief historical summary of the work of "Kinertia" is now in order.

Lord Kelvin first aroused "Kinertia's" interest in the problem of gravitation. That was in the year 1866 when "Kinertia" was a student under Lord Kelvin. "Kinertia" even then did not agree with the Newtonian theory of force as presented by Lord Kelvin. Incidentally, we desire to call the reader's attention to the fact that Albert Einstein was born in 1879 in Ulm, Germany, thirteen years later. It is a curious coincidence that both "Kinertia" and Einstein were engineers. During the period of time from 1877 to 1881, "Kinertia" became convinced that *acceleration* was the basic cause of what we generally speak of as "weight." The reader is undoubtedly aware of the fact that *acceleration* plays the fundamental rôle in Einstein's theory of gravitation. "Kinertia" corresponded with Kelvin, Tait, and Niven, of Cambridge, with the hope that he would be able to interest these men in his startling theory. This attempt met with little or no sympathy. Some years later, through an accident, "Kinertia" was unfortunately deprived of his hearing. This misfortune forced him to abandon his engineering profession for a rancher's life in the state of California. This new occupation gave "Kinertia" the requisite leisure to complete his investigations which resulted in confirming his supposition that *acceleration* was the great norm of the phenomenon of gravitation. His attempts, dating from the year 1899, to persuade our stubborn American scientists that the Newtonian theory of gravitation must be revised met with nothing but ridicule or indifference. To *Harper's Weekly* and its managing editor (1914), Mr. H. D. Wheeler, belongs the credit of having published "Kinertia's" series of articles entitled, "Do Bodies Fall?" The first article appeared in the issue of August 29, 1914, Vol. 59. The final article is dated November 7, 1914. From the preceding it is evident that "Kinertia" derived his norm of gravitation before Einstein was born. The question of priority is therefore definitely and irrefutably established in favor of "Kinertia" in the case of the General Theory of Relativity considered as a discussion of the problem of gravitation and acceleration.

We turn our attention now to the content of these two gravitational theories. We propose, by means of direct quotations from the works of these two men, to set forth their remarkable similarity. In the case of Einstein we shall quote from his recent book, "Relativity" (Henry Holt and Company, 1920), and in "Kinertia's" case our quotations will be from the *Harper's Weekly* articles.

The following comparative quotations show the striking similarity existing between Einstein and "Kinertia" when they consider the relation between acceleration and gravitation, a similarity which extends not only to intent but affects even the very words.

Einstein.

"We imagine a large portion of empty space, so far removed from stars and other appreciable masses that we have before us approximately the conditions required by the fundamental law of Galilei.—As reference-body let us imagine a spacious chest resembling a room with an observer inside who is equipped with apparatus. Gravitation naturally does not exist for this observer. He must fasten himself with strings to the floor, otherwise the slightest impact against the floor will cause him to rise slowly toward the ceiling of the room.

"To the middle of the lid of the chest is fixed externally a hook with rope attached, and now a 'being' (what kind of a being is immaterial to us) begins pulling at this with a constant force. The chest together with the observer then begin to move 'upwards' with a uniformly accelerated motion. In course of time their velocity will reach unheard-of values—provided that we are viewing all this from another reference-body which is not being pulled with a rope.

"But how does the man in the chest regard the process? The acceleration of the chest will be transmitted to him by the reaction of the floor of the chest. He must therefore take up this pressure by means of his legs if he does not wish to be laid out full length on the floor. He is then standing in the chest in exactly the same way as anyone stands in a room of a house on our earth. If he release a body which he previously had in his hand, the acceleration of the chest will no longer be transmitted to this body, and for this reason the body will approach the floor of the chest with an accelerated motion. The observer will further convince himself *that the acceleration of the body toward the floor of the chest is always of the same magnitude, whatever kind of body he may happen to use for the experiment.*"—(*"Relativity,"* pages 78 and 79.)

"Kinertia."

"I set to work to find out by experiment whether bodies actually did fall with the acceleration which the force of attraction was said to produce. Years before that, when in England, where some of our coal mines had vertical shafts about 1,500 feet deep, I had studied the cause of weight by having the hoisting engine drop me down with the full acceleration for about 500 feet. Then, by retardation during the lowest 500 feet, I could experience increase of weight all over me so marked that my legs could hardly support me. That taught me that acceleration was the proximate cause of weight, but at the time of these experiments I still thought the acceleration of the falling cage was really caused by the earth's attraction."—("Do Bodies Fall?" *Harper's Weekly*, August 29, 1914, page 210). "Weight is not a kinetic force because it cannot produce acceleration. *If a body were accelerated in proportion to its weight, then weight would be a force.*"—("Do Bodies Fall?" *Harper's Weekly*, October 17, 1914, page 383).

It is noteworthy that the only real difference between these two citations is that Einstein derives his conclusions from an hypothetical case, whereas "Kinertia" draws his conclusions from an actual experiment upon himself.

The interpreters of Einstein furnish us with further corroborative material which we submit as additional evidence in the case of "Kinertia" versus Einstein. Professor A. S. Eddington's interpretation of Einstein's theory is authoritative. The following quotations are from his work, "Space, Time and Gravitation" (Cambridge University Press, 1920). These quotations from Eddington's work also consider the equivalence of acceleration and gravitation.

Eddington.

"The nature of gravitation has seemed very mysterious, yet it is a remarkable fact that in a limited region it is possible to create an artificial field of force which imitates a natural gravitational field so exactly that, so far as experiments have yet gone, no one can tell the difference. Those who seek for an explanation of gravitation naturally aim to find a model which will reproduce its effects; *but no one before Einstein seems to have thought of finding the clue in these artificial fields, familiar as they are.*

"When a lift starts to move upward the occupants feel a characteristic sensation, which is actually identical with a sensation of increased weight.—In fact, the upward acceleration of the lift is in its mechanical effects exactly similar to an additional gravitational field superimposed on that normally present."—("Space, Time and Gravitation," page 64.)

On the eminent authority of Eddington we may therefore state with absolute certainty that Einstein found his clue to the nature of gravitation in the *artificial field* created by acceleration. Eddington's statement, however, that Einstein was the first scientist to think of this *clue* is evidently erroneous in view of the preceding quotations from the work of "Kinertia."

The remarkable similarity in thought of the following quotations pertaining to the relative effects produced by accelerated and uniform motion, is of high evidential interest.

Eddington.

"The observer in the accelerated lift travels upward in a straight line, say 1 foot in the first second, 4 feet in two seconds, 9 feet in three seconds, and so on. If we plot these points as x and t on a diagram we obtain a curved track. Presently the speed of the lift becomes uniform and the track in the diagram becomes straight. So long as the track is curved (accelerated motion) a field of force is perceived; it disappears when the track becomes straight (uniform motion)."—("Space, Time and Gravitation," page 66.)

"Kinertia."

"The proof that matter can exist without weight depends on the first law of motion; because if a mass moves uniformly in a straight line in space, it cannot have weight. If weight is caused by the mutual attraction of matter, then a mass subject to attraction must move in a curve. If weight is caused by acceleration then it cannot follow Newton's law and move with uniform velocity in a straight line."—("Do Bodies Fall?" *Harper's Weekly*, October 10, 1914, page 350.)

The conclusions of Einstein and "Kinertia" concerning the very existence of the force of gravitational attraction are identical in content. This is apparent from the following citations from an article by Professor Edwin B. Wilson, (Massachusetts Institute of Technology) and "Kinertia's" basic articles.

Wilson.

"But just suppose that somebody tells us that the force of gravity is physically non-existing quite as much as the centrifugal or Coriolis force, and that the reason we think that gravity is real is essentially the same that leads the untutored mind to believe there is a physical force acting to move objects to one side when a train goes around a curve—namely, an unhappily ignorant view of Nature. This is what Einstein asserts."—("Space, Time and Gravitation," the *Scientific Monthly*, March, 1920, page 226.)

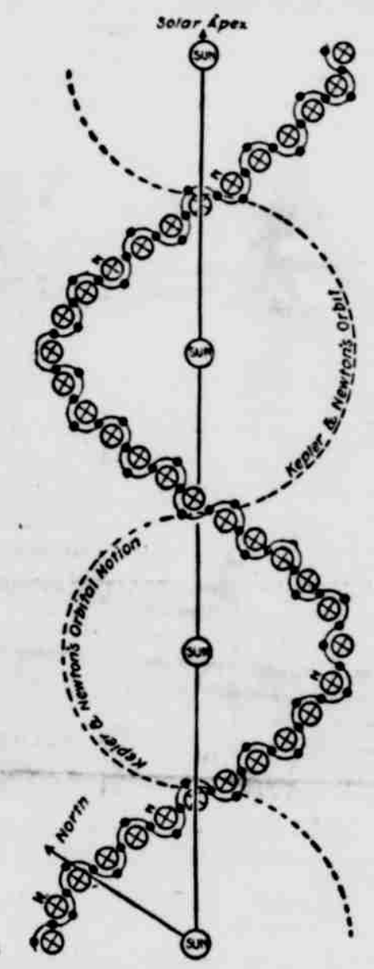
"Kinertia."

"But now, since it can be proved that there is no such force in the universe as attraction and that the supposed fall of bodies toward the earth *by that force* is only an illusion of the senses, there will be new ground upon which theologians can meet the Laplace attractionists, and Haeckel and his materialists."—("Do Bodies Fall?" *Harper's Weekly*, September 19, 1914, page 285.)

The preceding citations are sufficient to establish conclusively the fact that, in underlying essence, "Kinertia's" theory of gravitation is identical with Einstein's. Both men find the crux of the problem in acceleration, and the development of both theories is based upon the very same experiment.

(Concluded on page 14)

By KINERTIA



Kinertia's kinetic theory of the planetary motions in space. A kinetic illustration, qualitative only, of the Earth and Moon's corkscrew path in space. This is the theory which Kinertia declares he is prepared to establish as soon as the scientific world will acknowledge that the apparent fall of bodies is an illusion of the senses.

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